CLAIMS

1. An engine control system comprising:

a variable displacement internal combustion engine;

a plurality of cylinders located in said variable displacement internal combustion engine;

a plurality of fuel injectors for providing fuel to said plurality of cylinders;

a plurality of valves coupled to said plurality of cylinders, said plurality of valves controlling the air flow in and out of said plurality of cylinders;

an actuation apparatus for actuating said plurality of valves;

an intake manifold coupled to said variable displacement internal combustion engine;

a throttle coupled to said intake manifold;

a controller electronically coupled to said fuel injectors;

an accelerator pedal position sensor electronically coupled to said controller; and

wherein said controller determines the number of said cylinders to provide with fuel and air and a desired engine output torque based on a signal from said accelerator pedal position sensor and a hysteresis value.

2. The engine control system of Claim 1 further comprising spark plugs for igniting said fuel provided by said fuel injectors.

3. The engine control system of Claim 1 wherein said throttle is an electronic throttle.

4. The engine control system of Claim 1 wherein said accelerator pedal position sensor is an encoder.

5. The engine control system of Claim 1 wherein said variable displacement internal combustion engine is a gasoline engine.

6. The engine control system of Claim 1 wherein said variable displacement internal combustion engine includes at least two cylinders.

7. The engine control system of Claim 1 wherein said variable displacement internal combustion engine is a V8 engine.

8. The engine control system of Claim 1 wherein said actuation apparatus includes a decoupling apparatus that may couple and decouple from said plurality of valves.

9. The engine control system of Claim 1 further including an airflow sensor to detect airflow through said intake manifold.

10. An engine control system in a vehicle comprising:

a variable displacement internal combustion engine;

an intake manifold coupled to said variable displacement internal combustion engine;

a controller for controlling the displacement of said variable displacement internal combustion engine;

an accelerator pedal position sensor sensing accelerator pedal position, said accelerator pedal position sensor electronically coupled to said controller; and

wherein said controller receives position information from said accelerator pedal position sensor and changes the displacement of said variable displacement internal combustion engine in response to said accelerator pedal position sensor and the available torque provided by the

variable displacement internal combustion engine in a partially displaced operating mode..

11. The engine control system of Claim 10 wherein said variable displacement internal combustion engine is a gasoline engine.

12. The engine control system of Claim 10 wherein said variable displacement internal combustion engine is an eight-cylinder engine.

13. The engine control system of Claim 10 wherein said manifold pressure is representative of torque for said variable displacement internal combustion engine.

14. The engine control system of Claim 10 further comprising a filter.

15. The engine control system of Claim 10 further including an electronic throttle.

16. A method of controlling the displacement of a variable displacement internal combustion engine comprising the steps of:

measuring a variable indicative of pedal position for a variable displacement internal combustion engine;

generating a torque threshold that indicates a torque condition to vary the displacement of the variable displacement internal combustion engine;

providing a hysteresis value for the pedal position to reduce busyness; and

varying the displacement of the variable displacement internal combustion engine with reference to a variable indicative of pedal position and the hysteresis value.